FIG. 1

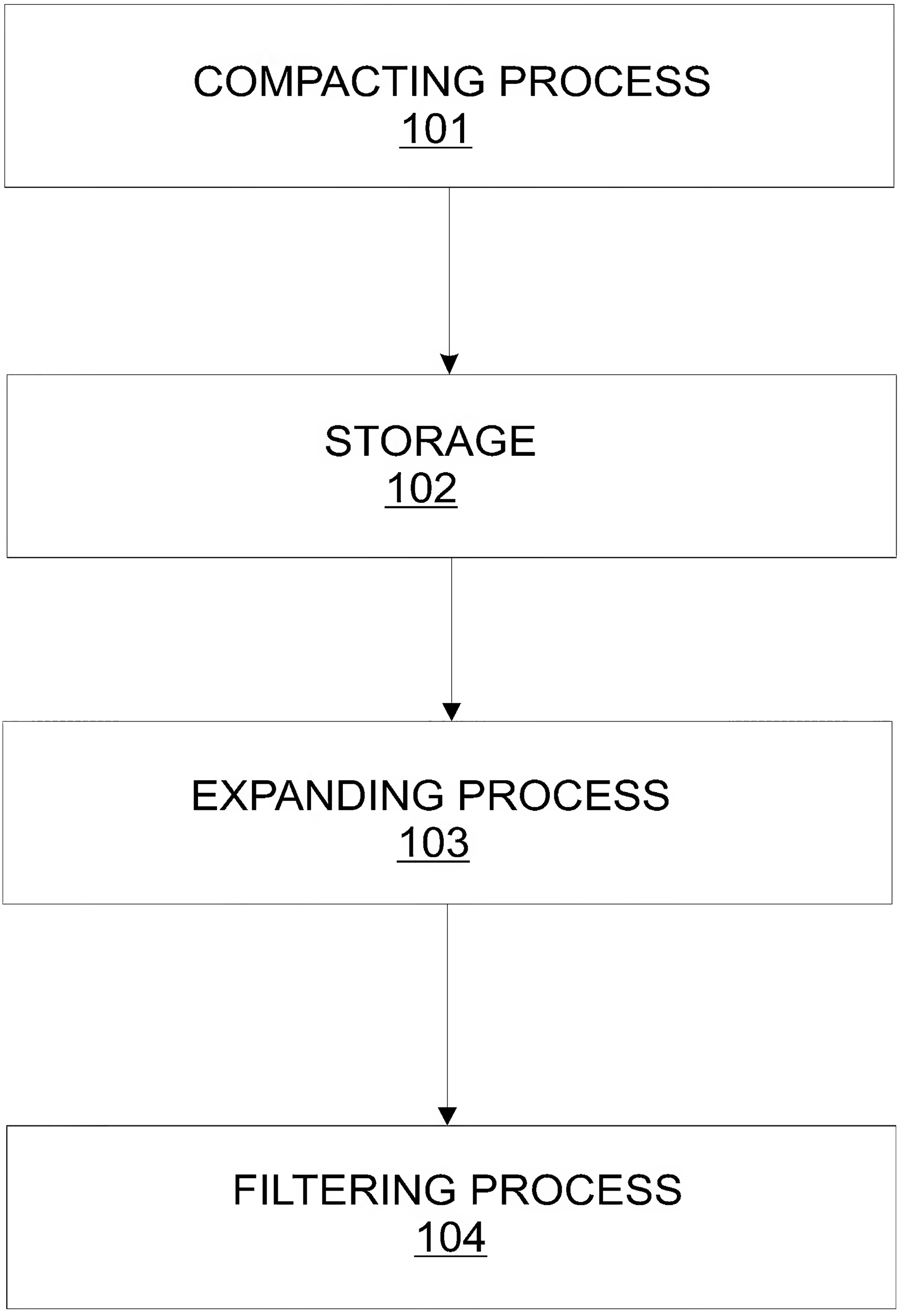

COMPACTING PROCESS
101
STORAGE
102
EXPANDING PROCESS
103
FILTERING PROCESS
104

FIG. 2

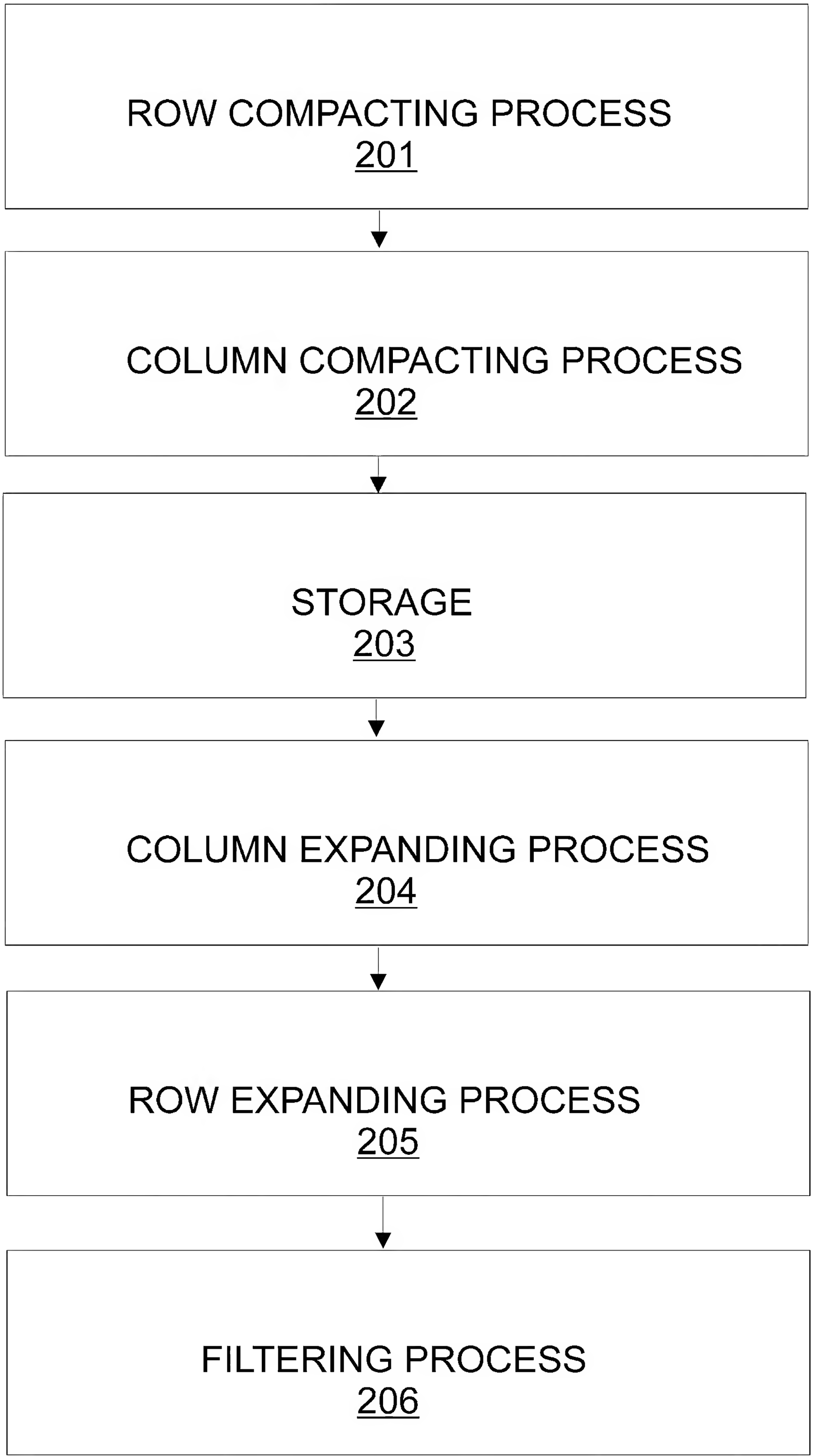

ROW COMPACTING PROCESS
201
COLUMN COMPACTING PROCESS
202
STORAGE
203
COLUMN EXPANDING PROCESS
204
ROW EXPANDING PROCESS
205
FILTERING PROCESS
206

FIG. 3

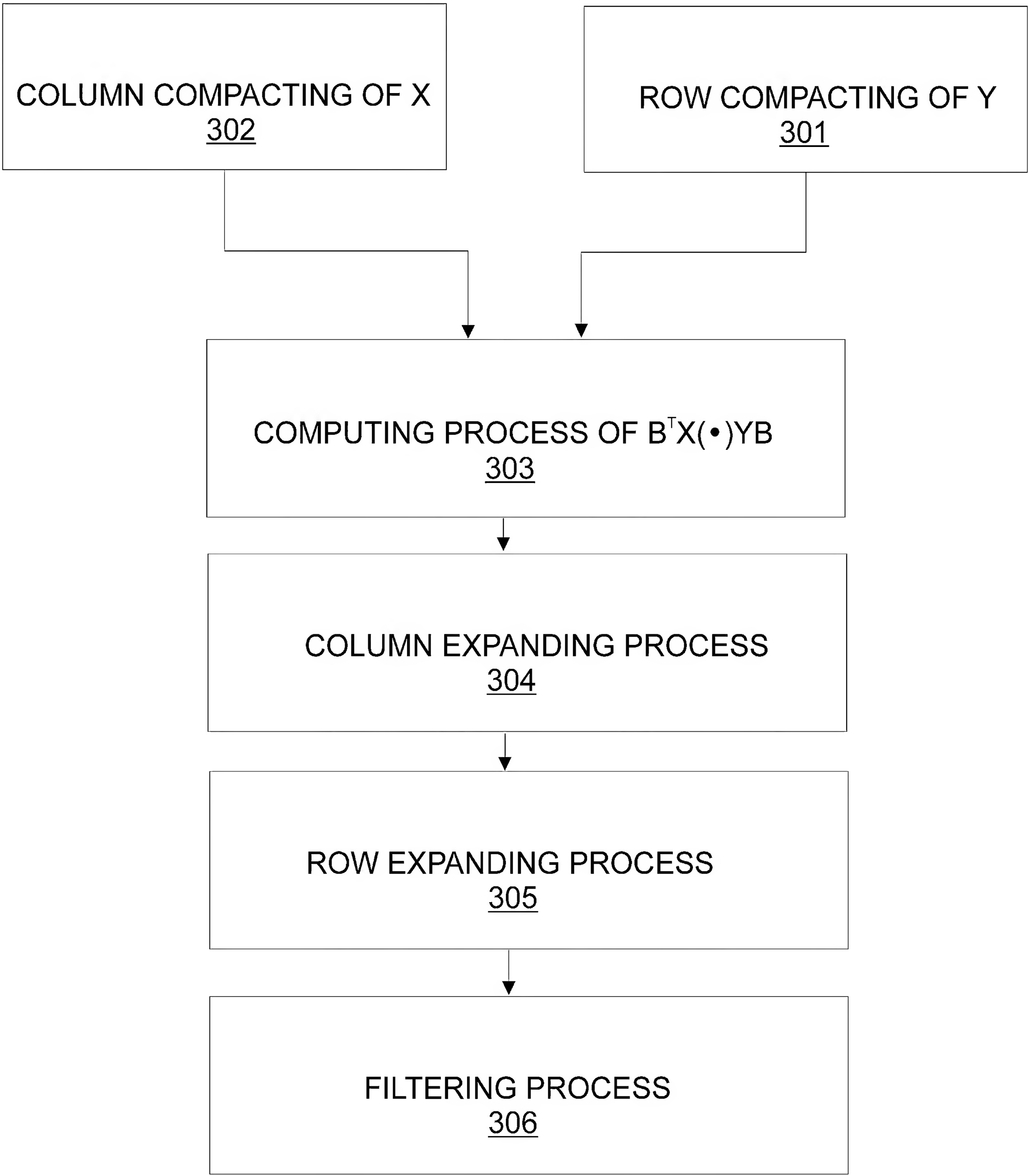

COLUMN COMPACTING OF X
302
ROW COMPACTING OF Y
301
COMPUTING PROCESS OF B^TX(•)YB
303
COLUMN EXPANDING PROCESS
304
ROW EXPANDING PROCESS
305
FILTERING PROCESS
306

FIG. 4

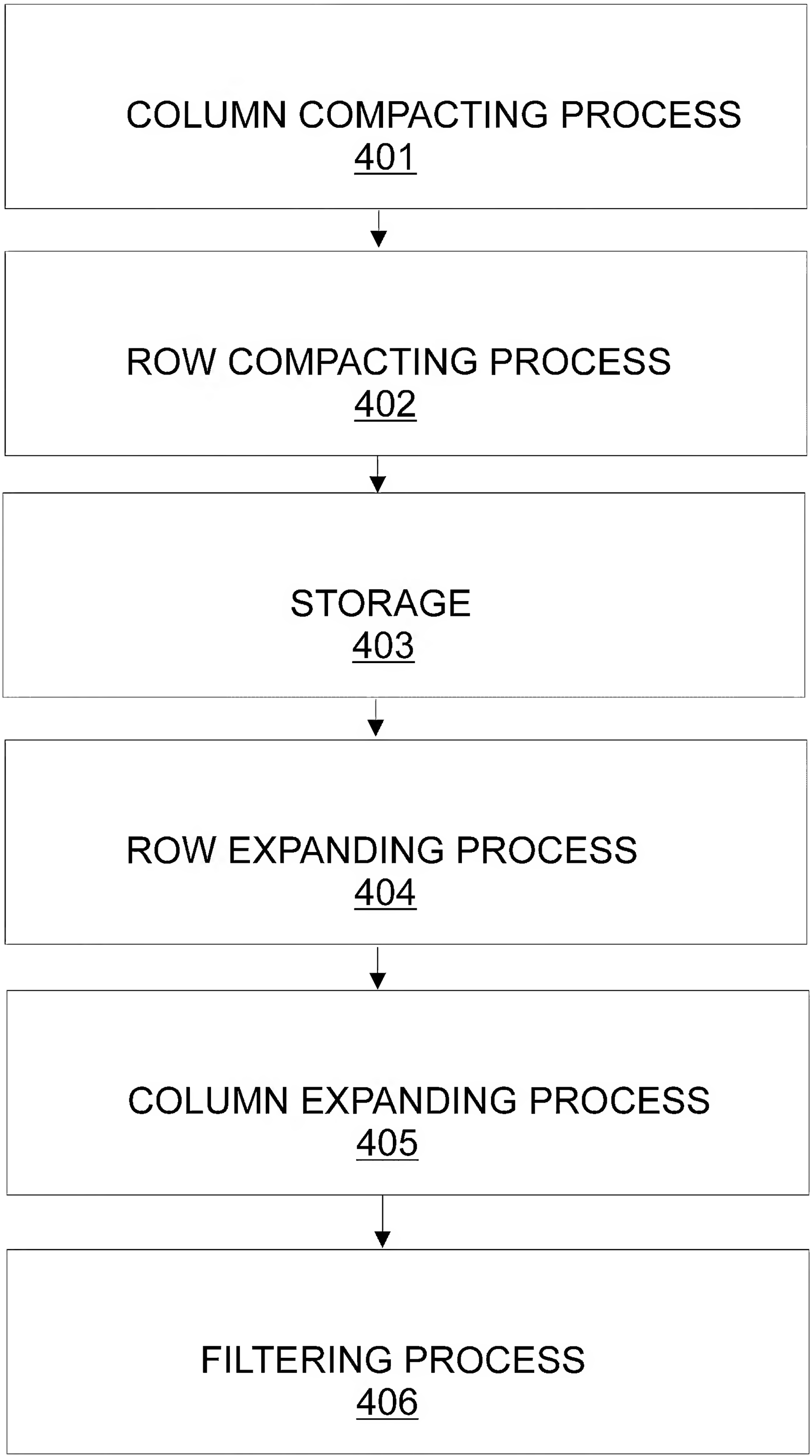

COLUMN COMPACTING PROCESS
401
ROW COMPACTING PROCESS
402
STORAGE
403
ROW EXPANDING PROCESS
404
COLUMN EXPANDING PROCESS
405
FILTERING PROCESS
406

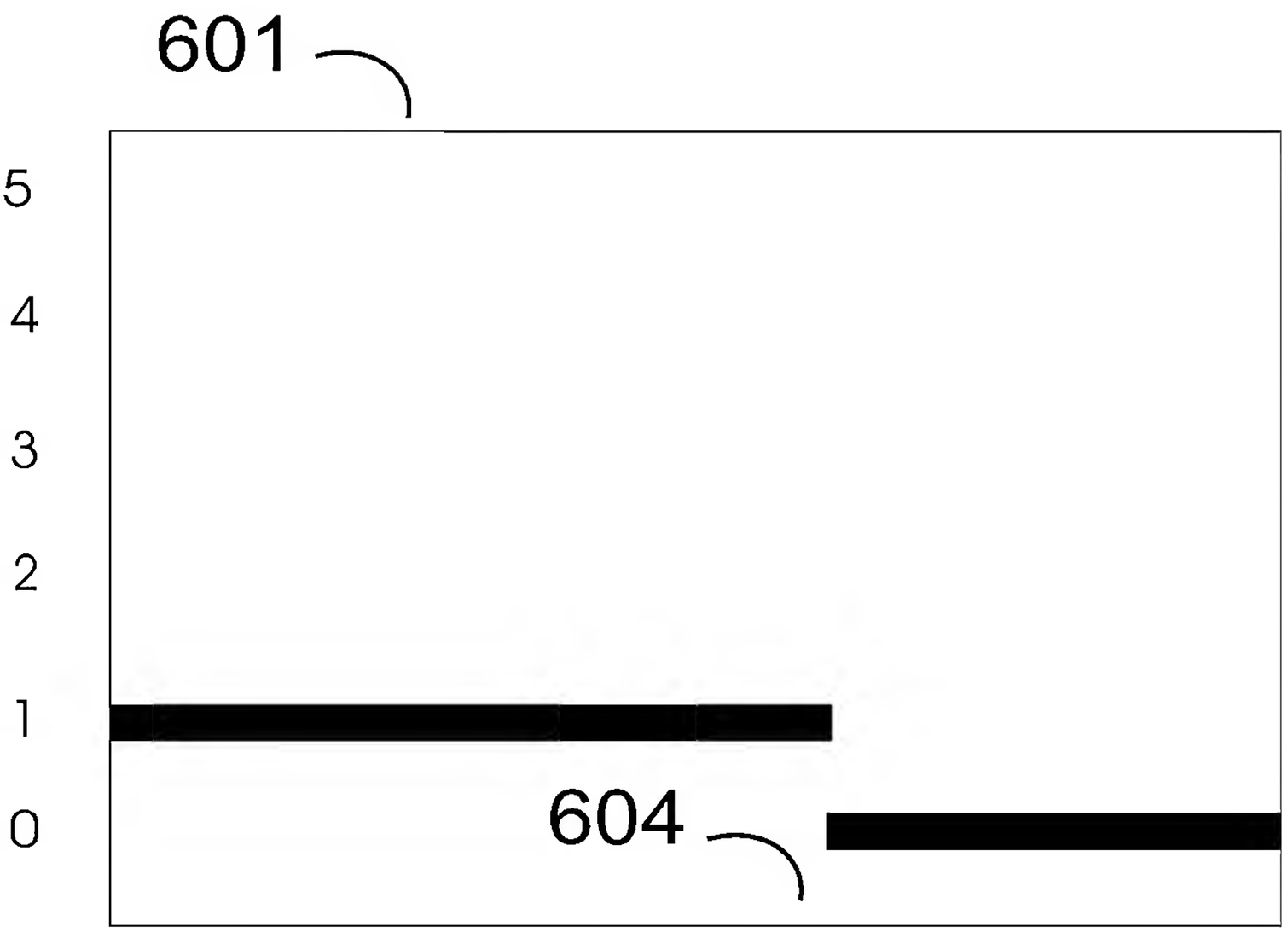
FIG. 5

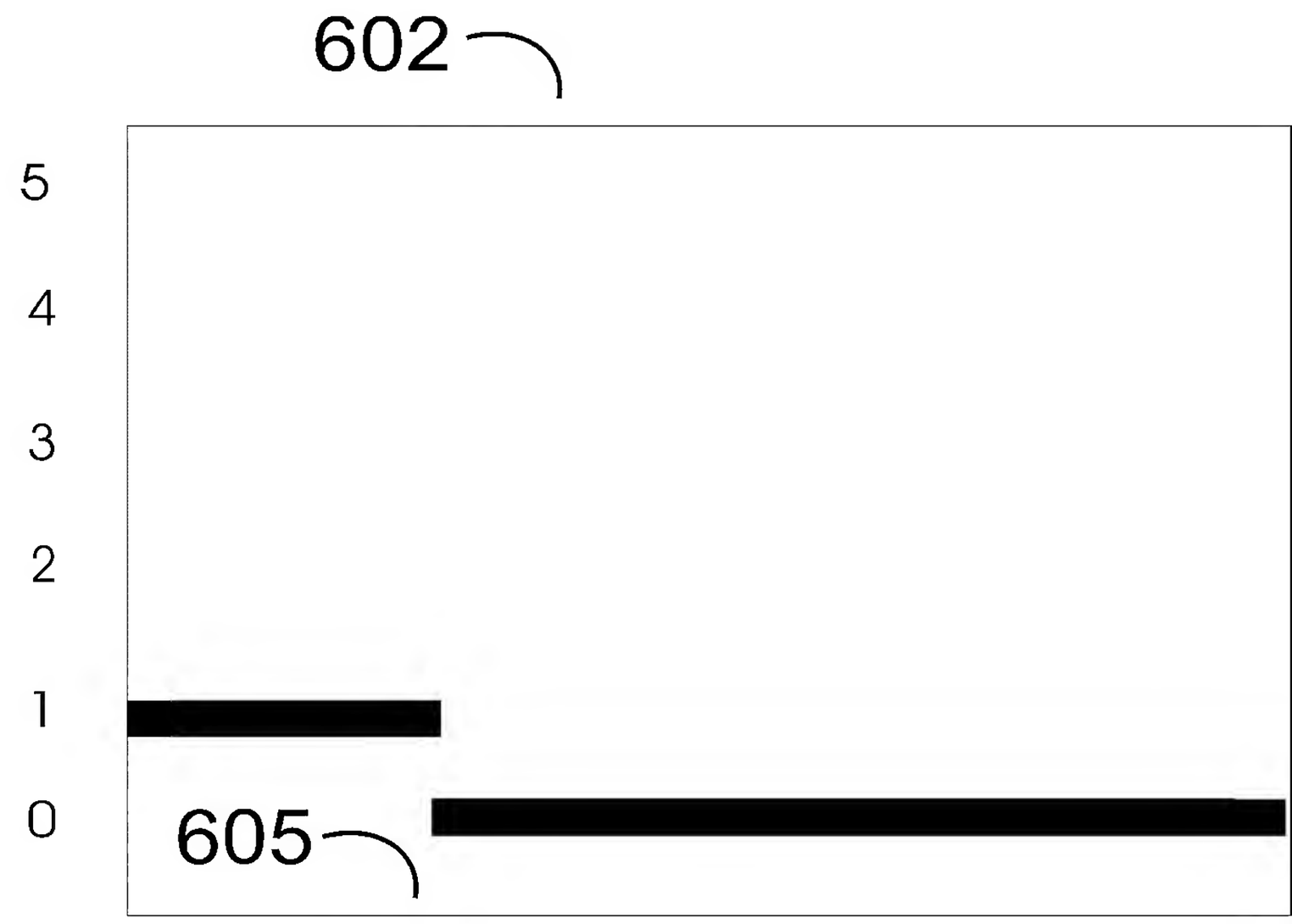
$$B = \begin{bmatrix} 1 & 0 & 1 & 1 & 4 & 1 & 4 & 4 & 3 & 1 & 4 & 4 & 4 \\ 1 & 1 & 0 & 4 & 1 & 4 & 1 & 3 & 4 & 4 & 1 & 3 & 3 \\ 1 & 1 & 4 & 0 & 1 & 4 & 3 & 1 & 4 & 4 & 3 & 1 & 3 \\ 1 & 4 & 1 & 1 & 0 & 3 & 4 & 4 & 1 & 3 & 4 & 4 & 4 \\ 1 & 1 & 4 & 4 & 3 & 0 & 1 & 1 & 4 & 4 & 3 & 3 & 1 \\ 1 & 4 & 1 & 3 & 4 & 1 & 0 & 4 & 1 & 3 & 4 & 4 & 4 \\ 1 & 4 & 3 & 1 & 4 & 1 & 4 & 0 & 1 & 3 & 4 & 4 & 4 \\ 1 & 3 & 4 & 4 & 1 & 4 & 1 & 1 & 0 & 4 & 3 & 3 & 3 \\ 1 & 1 & 4 & 4 & 3 & 4 & 3 & 3 & 4 & 0 & 1 & 1 & 1 \\ 1 & 4 & 1 & 3 & 4 & 3 & 4 & 4 & 3 & 1 & 0 & 4 & 4 \\ 1 & 4 & 3 & 1 & 4 & 3 & 4 & 4 & 3 & 1 & 4 & 0 & 4 \\ 1 & 3 & 4 & 4 & 1 & 4 & 3 & 3 & 4 & 4 & 1 & 1 & 3 \\ 1 & 4 & 3 & 3 & 4 & 1 & 4 & 4 & 3 & 1 & 4 & 4 & 0 \\ 1 & 3 & 4 & 4 & 3 & 4 & 1 & 3 & 4 & 4 & 1 & 3 & 1 \\ 1 & 3 & 4 & 4 & 3 & 4 & 3 & 1 & 4 & 4 & 3 & 1 & 1 \\ 1 & 4 & 3 & 3 & 4 & 3 & 4 & 4 & 1 & 3 & 4 & 4 & 4 \end{bmatrix}$$

$$C := \begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\ -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 \\ 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & 0 & 1 & 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 0 & -1 & 0 & -1 & -1 & -2 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & 0 & 1 & 0 & 1 & 1 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & 0 & -1 & 0 & -1 & 0 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & -1 & 0 & 0 & -1 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1 & -1 & -1 & -1 \end{bmatrix}$$

$$A = BC = \begin{bmatrix} 1 & 0 & 0 & -3 & 0 & -3 & -3 & -2 & 0 & -3 & -3 & -2 & -3 & -2 & -2 & -3 \\ 0 & 1 & -3 & 0 & -3 & 0 & -2 & -3 & -3 & 0 & -2 & -3 & -2 & -3 & -3 & -2 \\ 0 & -3 & 1 & 0 & -3 & -2 & 0 & -3 & -3 & -2 & 0 & -3 & -2 & -3 & -3 & -2 \\ -3 & 0 & 0 & 1 & -2 & -3 & -3 & 0 & -2 & -3 & -3 & 0 & -3 & -2 & -2 & -3 \\ 0 & -3 & -3 & -2 & 1 & 0 & 0 & -3 & -3 & -2 & -2 & -3 & 0 & -3 & -3 & -2 \\ -3 & 0 & -2 & -3 & 0 & 1 & -3 & 0 & -2 & -3 & -3 & -2 & -3 & 0 & -2 & -3 \\ -3 & -2 & 0 & -3 & 0 & -3 & 1 & 0 & -2 & -3 & -3 & -2 & -3 & -2 & 0 & -3 \\ -2 & -3 & -3 & 0 & -3 & 0 & 0 & 1 & -3 & -2 & -2 & -3 & -2 & -3 & -3 & 0 \\ 0 & -3 & -3 & -2 & -3 & -2 & -2 & -3 & 1 & 0 & 0 & -3 & 0 & -3 & -3 & -2 \\ -3 & 0 & -2 & -3 & -2 & -3 & -3 & -2 & 0 & 1 & -3 & 0 & -3 & 0 & -2 & -3 \\ -3 & -2 & 0 & -3 & -2 & -3 & -3 & -2 & 0 & -3 & 1 & 0 & -3 & -2 & 0 & -3 \\ -2 & -3 & -3 & 0 & -3 & -2 & -2 & -3 & -3 & 0 & 0 & 1 & -2 & -3 & -3 & 0 \\ -3 & -2 & -2 & -3 & 0 & -3 & -3 & -2 & 0 & -3 & -3 & -2 & 1 & 0 & 0 & -3 \\ -2 & -3 & -3 & -2 & -3 & 0 & -2 & -3 & -3 & 0 & -2 & -3 & 0 & 1 & -3 & 0 \\ -2 & -3 & -3 & -2 & -3 & -2 & 0 & -3 & -3 & -2 & 0 & -3 & 0 & -3 & 1 & 0 \\ -3 & -2 & -2 & -3 & -2 & -3 & -3 & 0 & -2 & -3 & -3 & 0 & -3 & 0 & 0 & 1 \end{bmatrix}$$

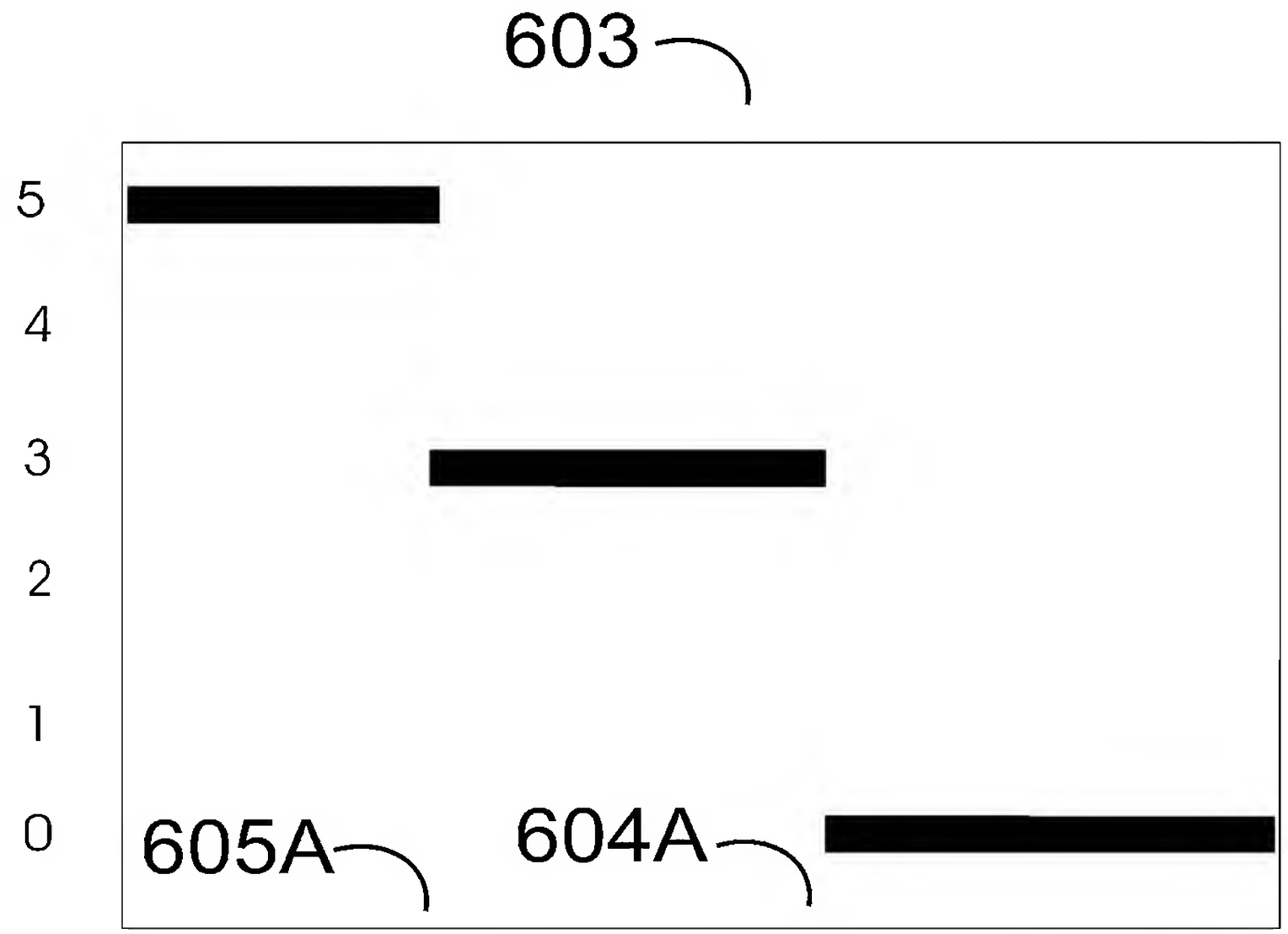
FIG. 6





S

Z



2S+3Z